

4.2.E. 0513010505.

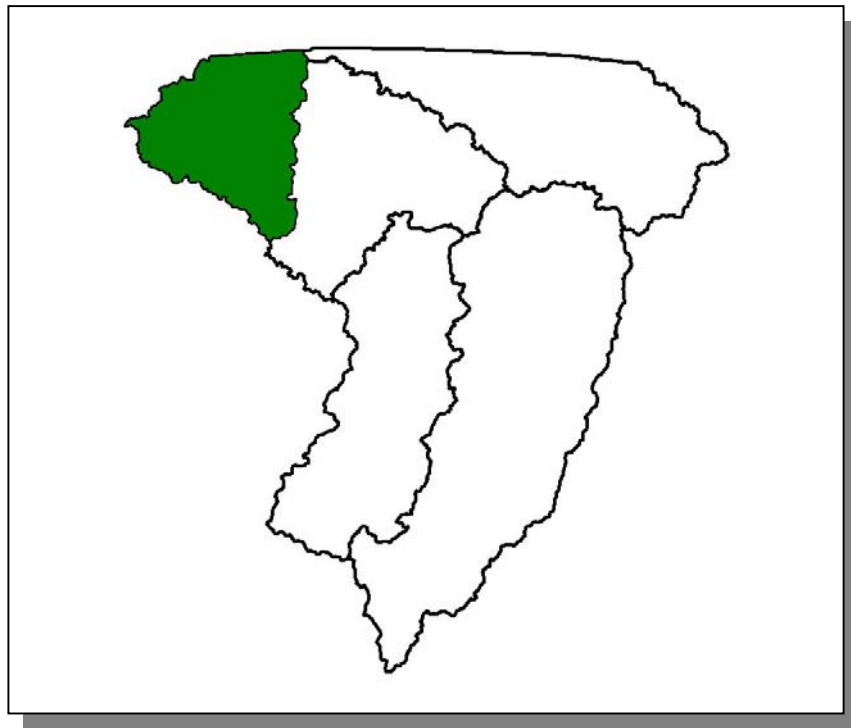


Figure 4-135. Location of Subwatershed 0513010505. All Obey River HUC-10 subwatershed in Tennessee boundaries are shown for reference.

4.2.E.i. 051301050501 (Dale Hollow Lake).

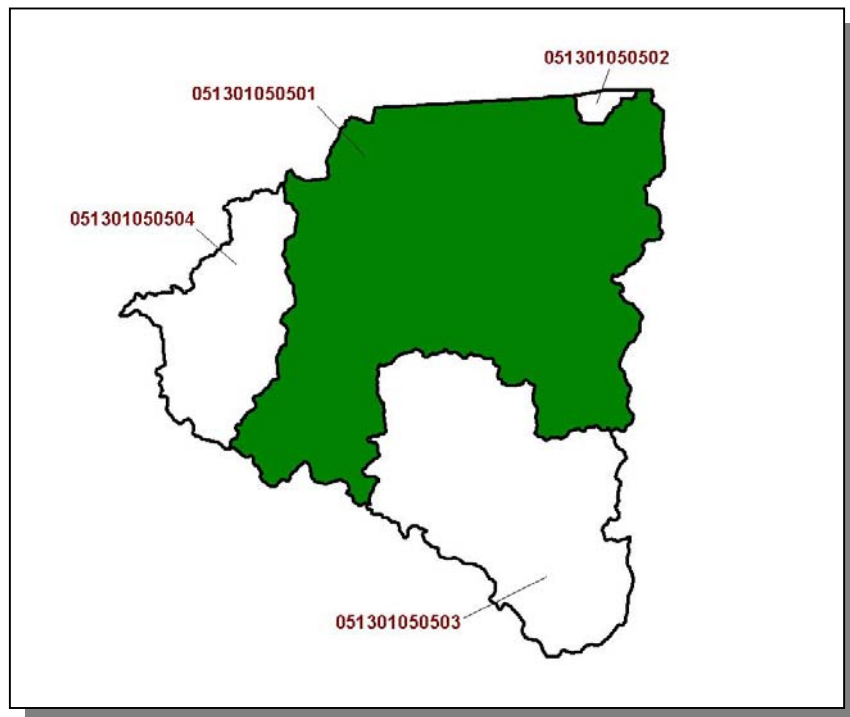


Figure 4-136. Location of Subwatershed 051301050501. All Obey River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

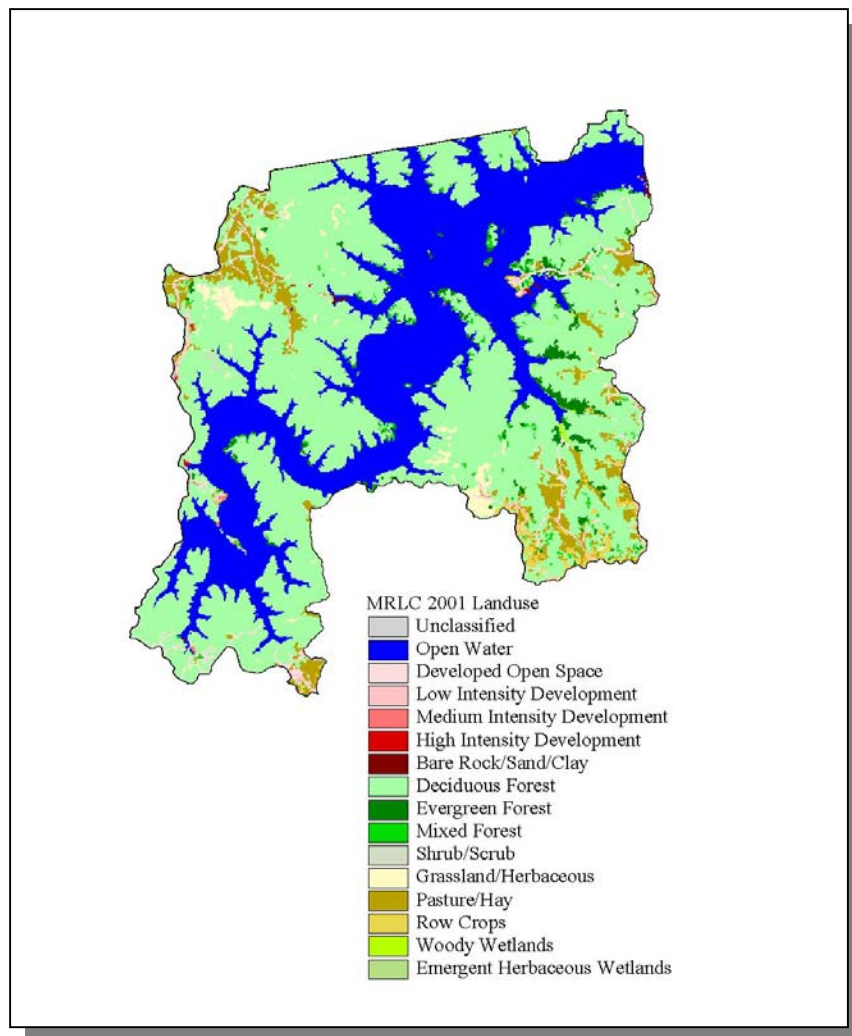


Figure 4-137. Illustration of Land Use Distribution in Subwatershed 051301050501.

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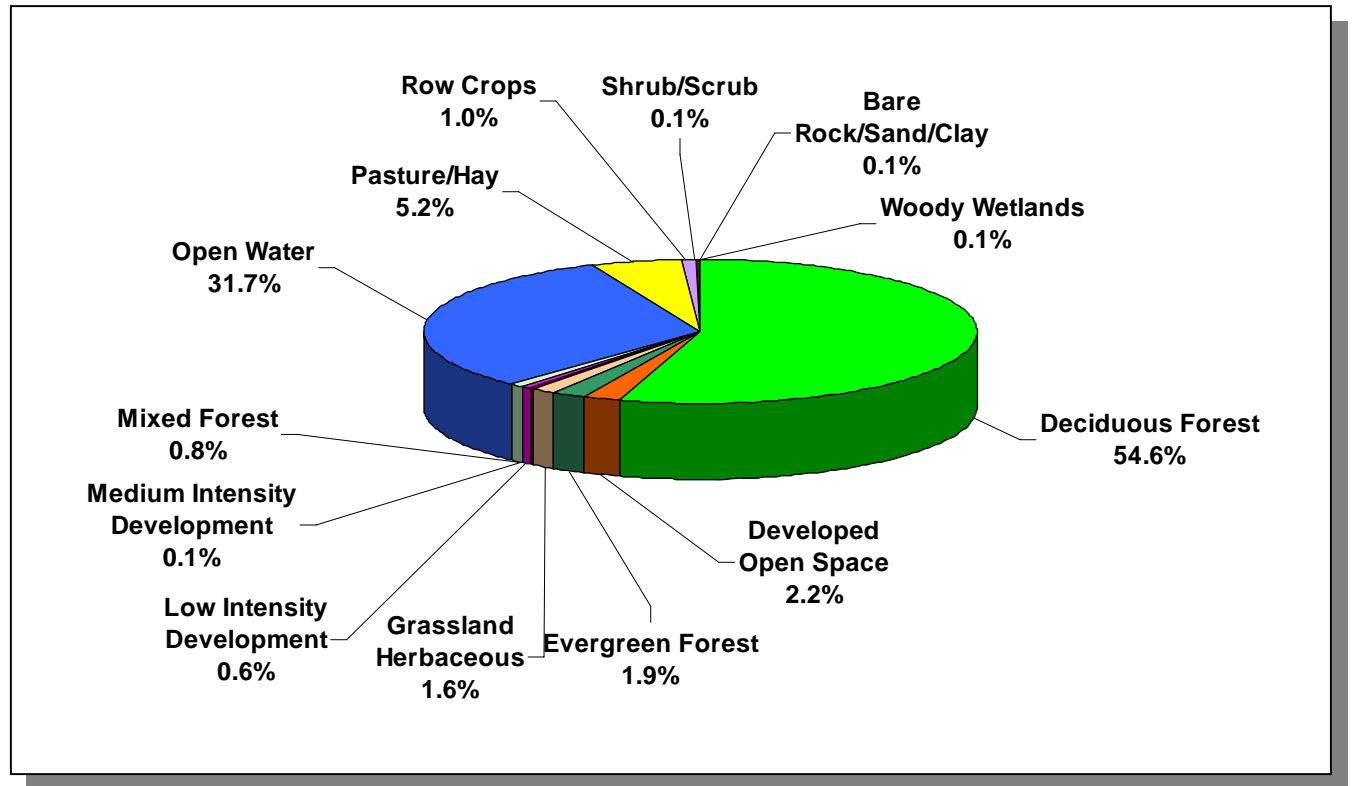


Figure 4-138. Land Use Distribution in Subwatershed 051301050501. More information is provided in Appendix IV.

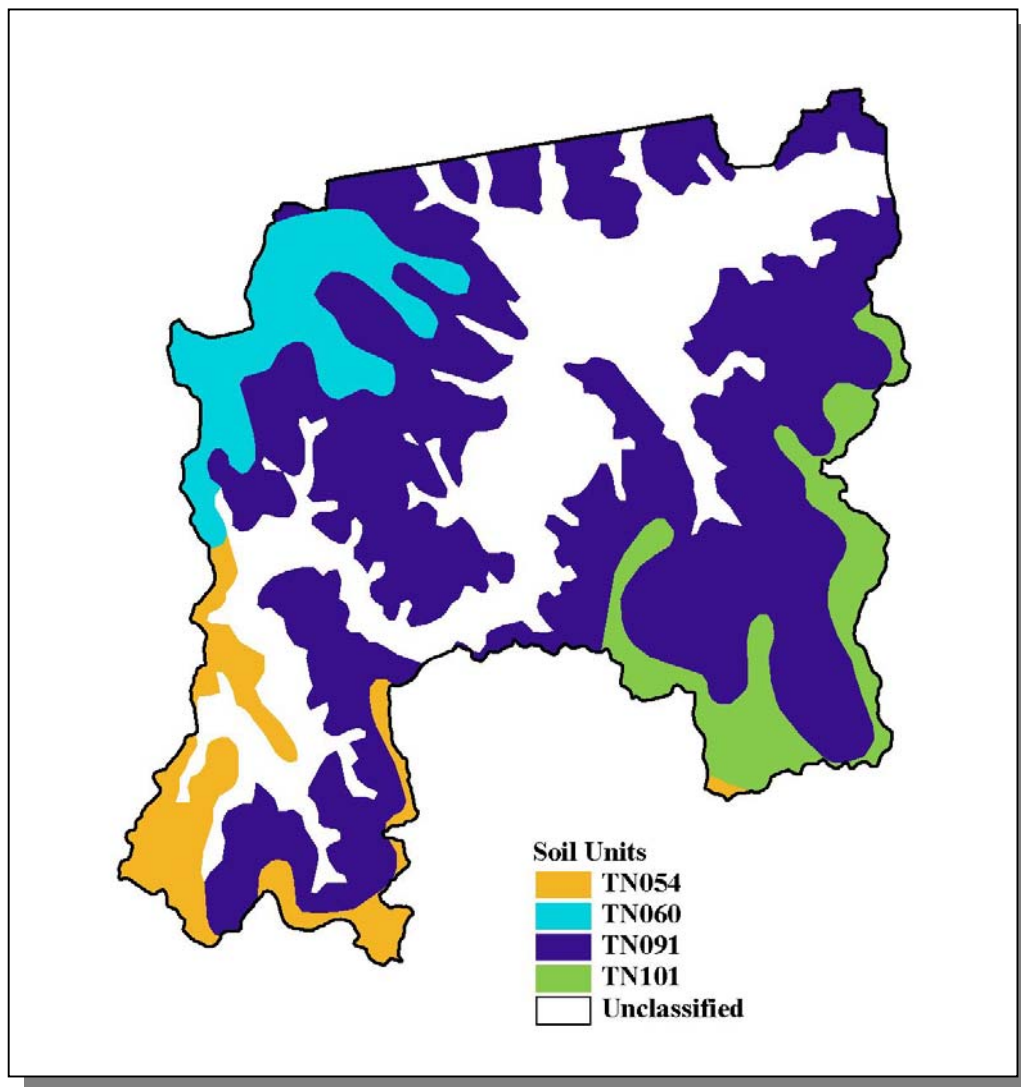


Figure 4-139. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050501.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN091	0.00	B	2.95	5.86	Loam	0.34
TN101	0.00	B	1.71	5.39	Loam	0.35

Table 4-129. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050501. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Clay	7,238	7,311	7,976	18.72	1,355	1,369	1,493	10.2
Overton	17,636	19,171	20,118	0.34	59	65	68	15.3
Total	24,874	26,482	28,094		1,414	1,434	1,561	10.4

Table 4-130. Population Estimates in Subwatershed 051301050501.

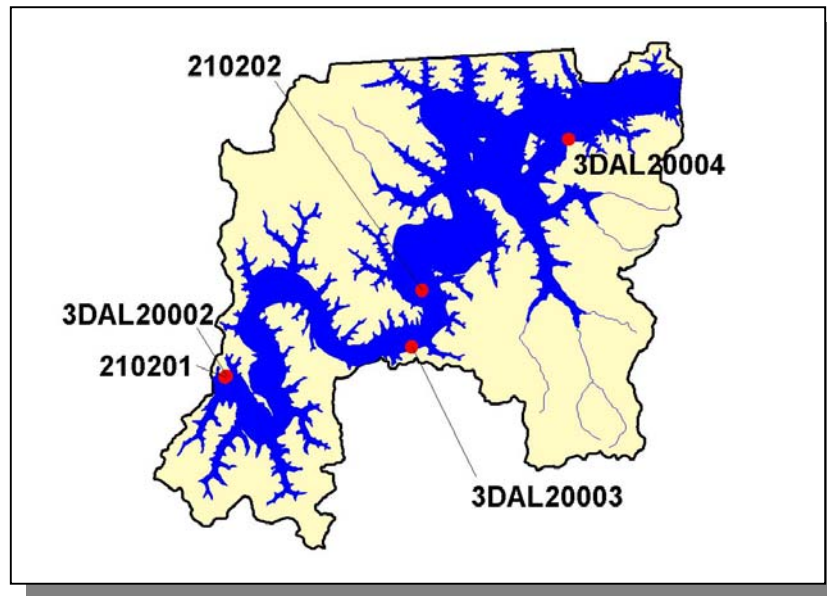


Figure 4-140. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301050501. More information, including site names and locations, is provided in Appendix IV.

4.2.E.i.a. Point Source Contributions.

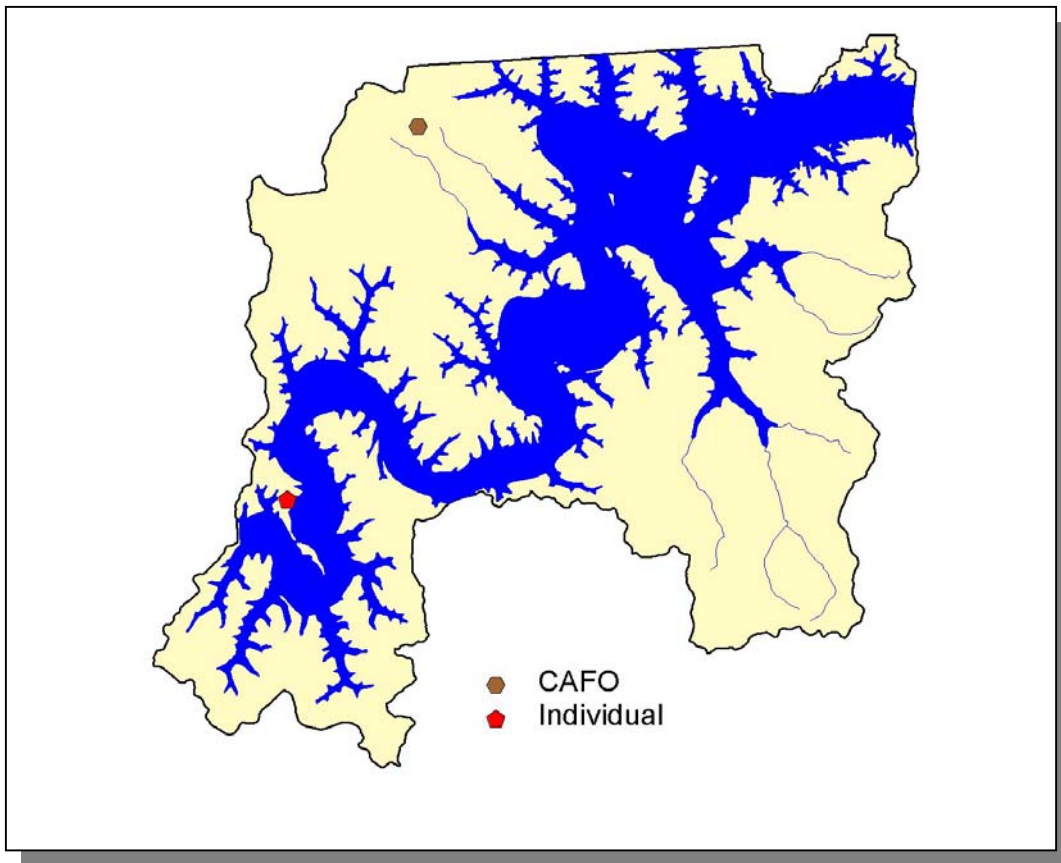


Figure 4-141. Location of Permits Issued in Subwatershed 051301050501. More information, including the names of facilities, is provided in Appendix IV.

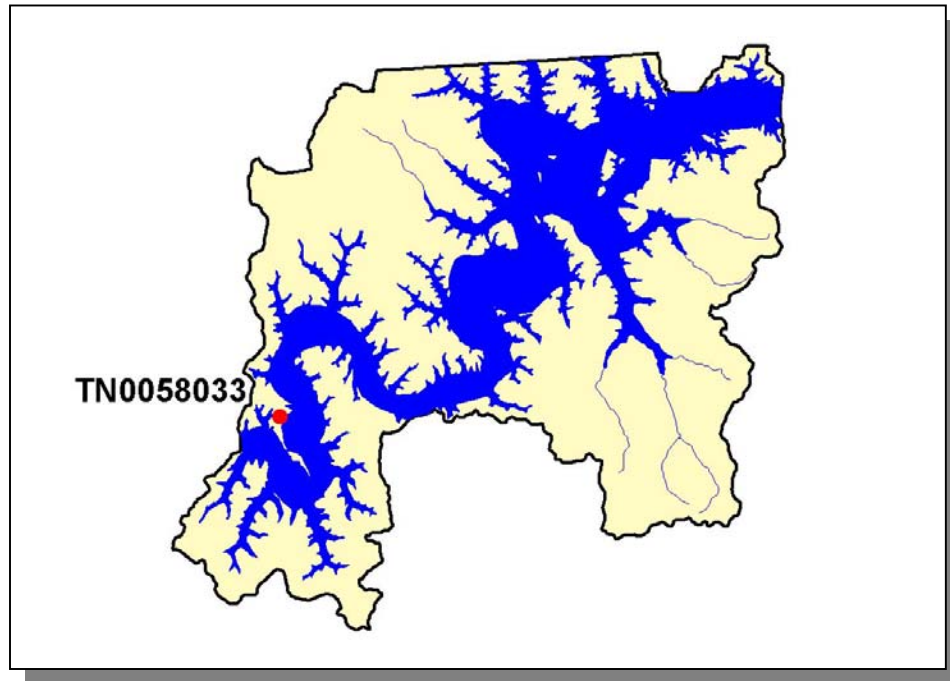


Figure 4-142. Location of Active NPDES Sites in Subwatershed 051301050501. More information, including the names of facilities, is provided in Appendix IV.

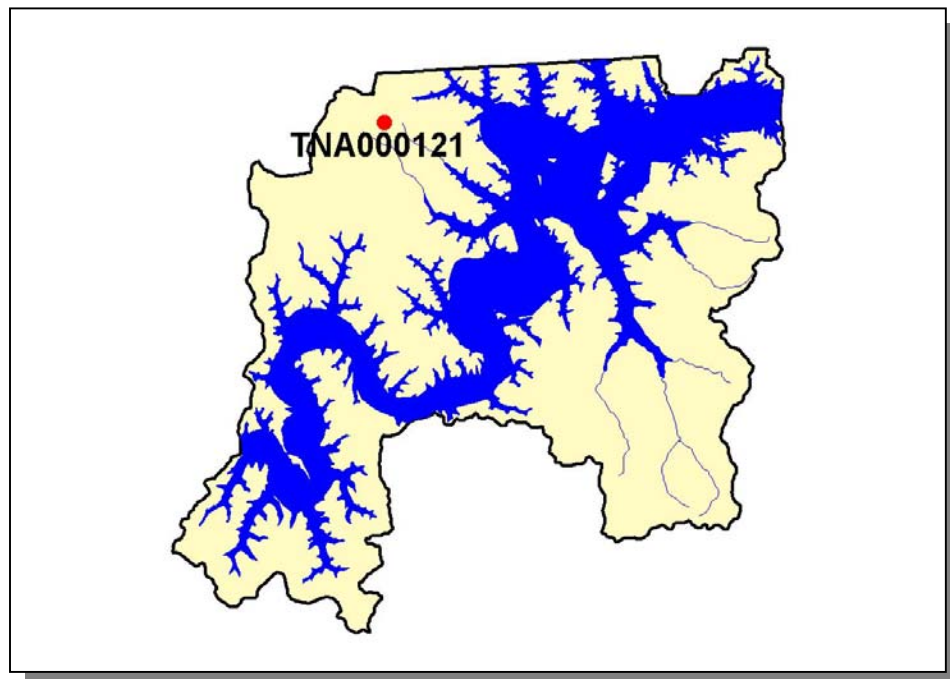


Figure 4-143. Location of Concentrated Animal Feeding Operation (CAFO) in Subwatershed 051301050501. More information, including the names of facilities, is provided in Appendix IV.

4.2.E.i.a.i. Dischargers to Water Bodies Listed on the 2004 303(d) List

There is one NPDES facility discharging to water bodies listed on the 2004 303(d) list in Subwatershed 051301050501:

- TN0058033 (Cedar Hill Resort) discharges to Obey River @ RM 10.3

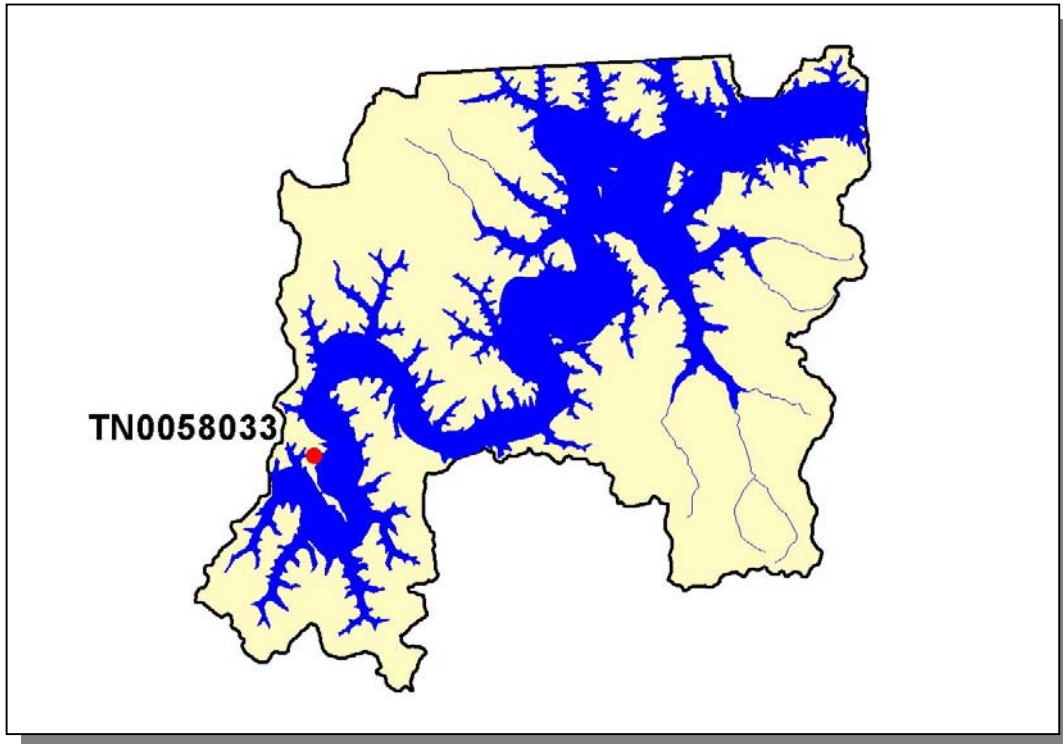


Figure 4-144. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 051301050501. More information, including the names of facilities, is provided in Appendix IV.

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PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0058033					

Table 4-131. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050501. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	FLOW
TN0058033	X

Table 4-132. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050501.

PERMIT #	CBOD ₅	NH ₃	TRC	TSS	SETTLEABLE SOLIDS	DO	pH
TN0058033	X		X	X	X	X	X

Table 4-133. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050501. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

PERMIT #	<i>E. coli</i>
TN0058033	X

Table 4-134. Bacteria Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050501.

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4.2.E.i.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
67	2,495	5	<5	32	<5

Table 4-135. Summary of Livestock Count Estimates in Subwatershed 051301050501. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Clay	0	14,574	0	18	174	23
Overton	15,150	27,812	1,200	1,173	811	59

Table 4-136. Summary of Livestock Count Estimates in Clay and Overton Counties. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1
Overton	170.3	170.3	1.7	7.0

Table 4-137. Forest Acreage and Annual Removal Rates (1987-1994) in Clay and Overton Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.11
Grass (Hayland)	0.39
Legumes, Grass (Hayland)	0.59
Grass, Forbs, Legumes (Mixed Pasture)	1.36
Corn (Row Crops)	4.34
Soybeans (Row Crops)	10.79
Tobacco (Row Crops)	28.52
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	2.46
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	1.53

Table 4-138. Annual Estimated Total Soil Loss in Subwatershed 051301050501.

4.2.E.ii. 051301050502 (Sulphur Creek).

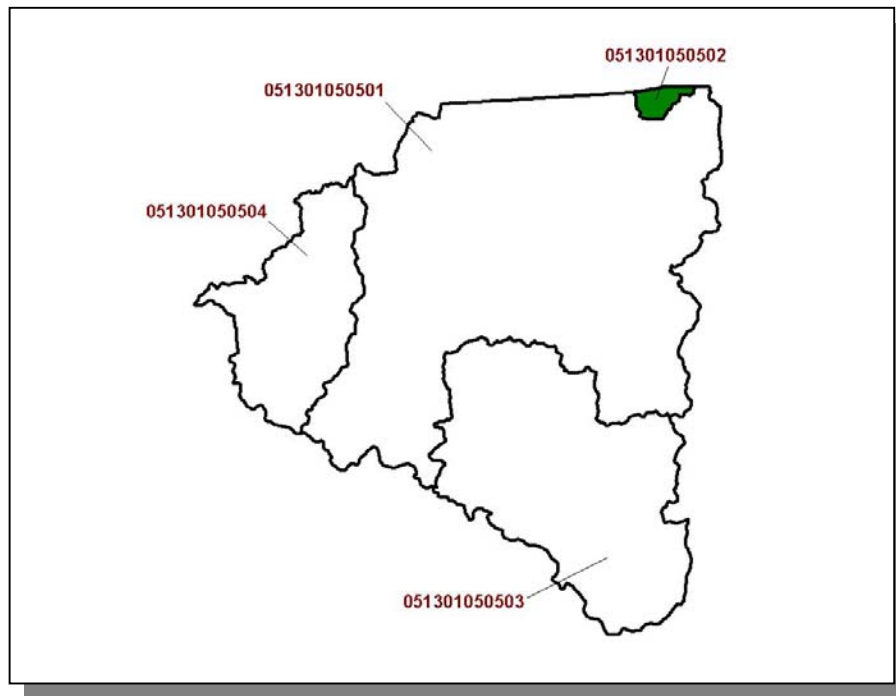


Figure 4-145. Location of Subwatershed 051301050502. All Obey River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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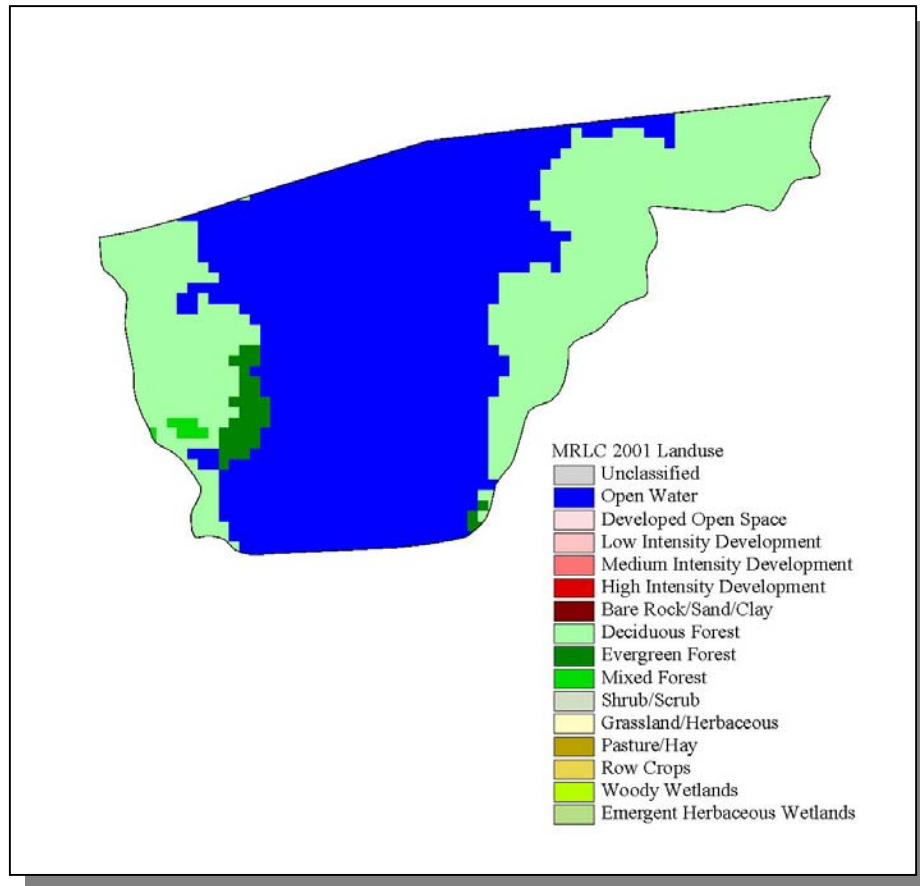


Figure 4-146. Illustration of Land Use Distribution in Subwatershed 051301050502.

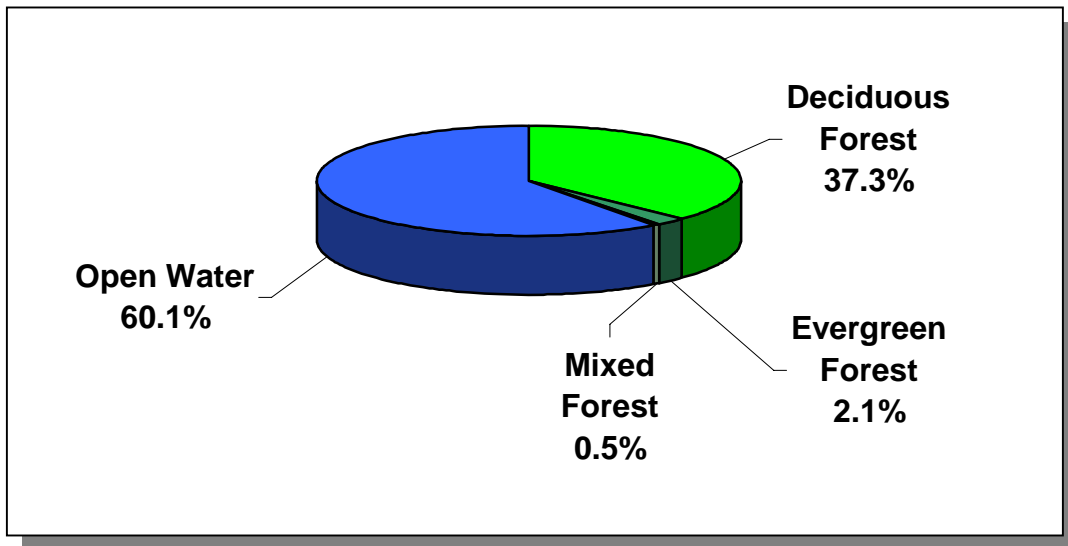


Figure 4-147. Land Use Distribution in Subwatershed 051301050502. More information is provided in Appendix IV.

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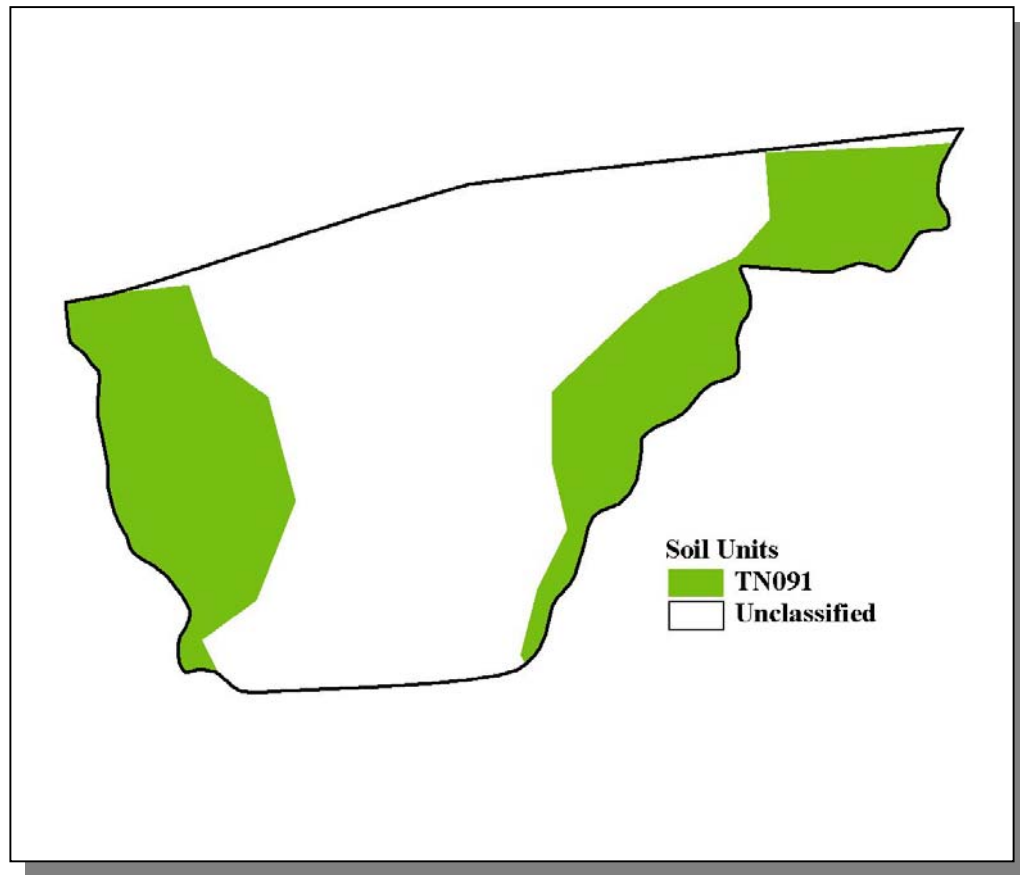


Figure 4-148. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050502.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN091	0.00	B	2.95	5.86	Loam	0.34

Table 4-139. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050502. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Clay	7,238	7,311	7,976	0.23	16	17	18	12.5

Table 4-140. Population Estimates in Subwatershed 051301050502.

4.2.E.ii.a. Point Source Contributions.

There are no point source contributions in this subwatershed.

4.2.E.ii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS				
County	Cattle	Chickens (Layers)	Hogs	Sheep
Clay	14,574	18	174	23

Table 4-141. Summary of Livestock Count Estimates in Clay County. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1

Table 4-142. Forest Acreage and Annual Removal Rates (1987-1994) in Clay County.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.14
Grass (Hayland)	0.40
Legumes, Grass (Hayland)	0.53
Grass, Forbs, Legumes (Mixed Pasture)	1.38
Tobacco (Row Crops)	28.52
Farmsteads and Ranch Headquarters	1.56

Table 4-143. Annual Estimated Total Soil Loss in Subwatershed 051301050502.

4.2.E.iii. 051301050503 (Mitchell Creek).

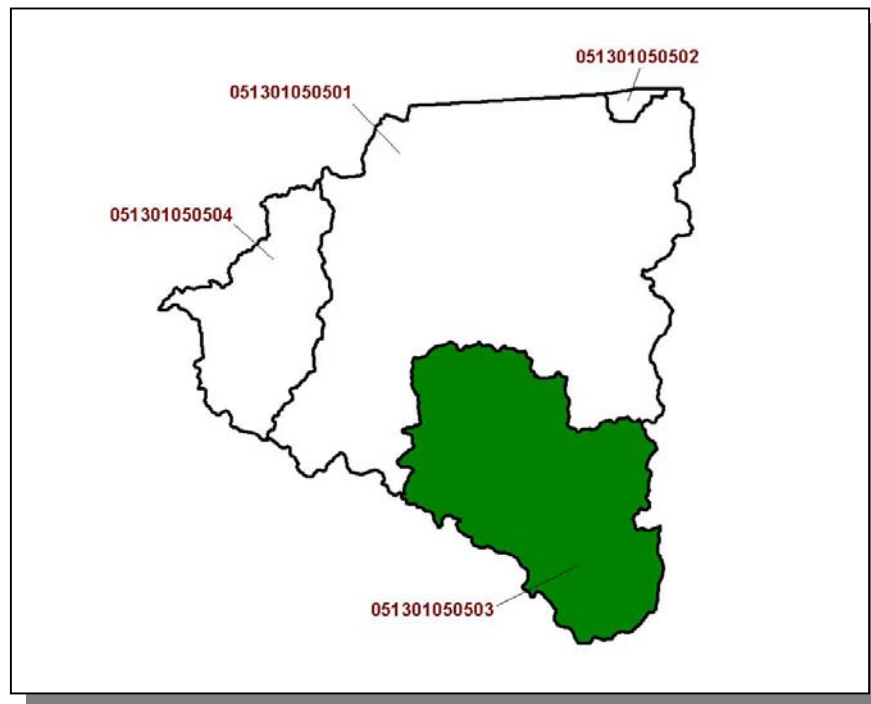


Figure 4-149. Location of Subwatershed 051301050503. All Obey River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

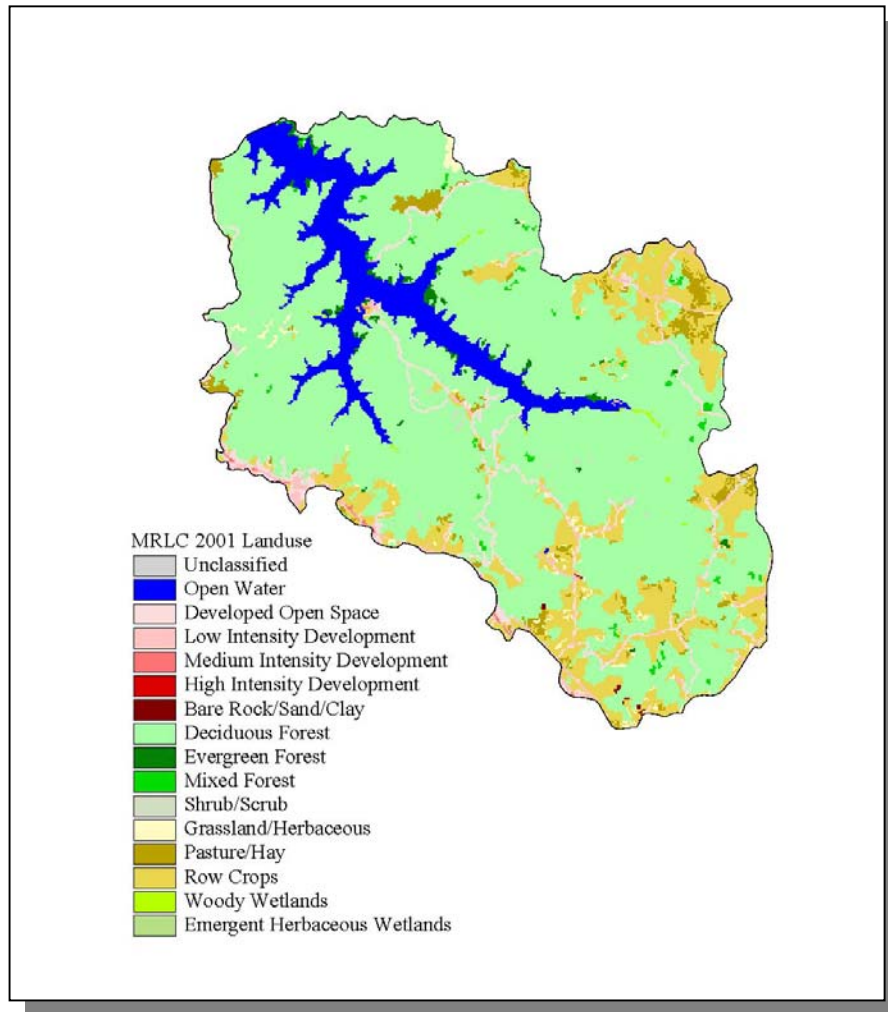


Figure 4-150. Illustration of Land Use Distribution in Subwatershed 051301050503.

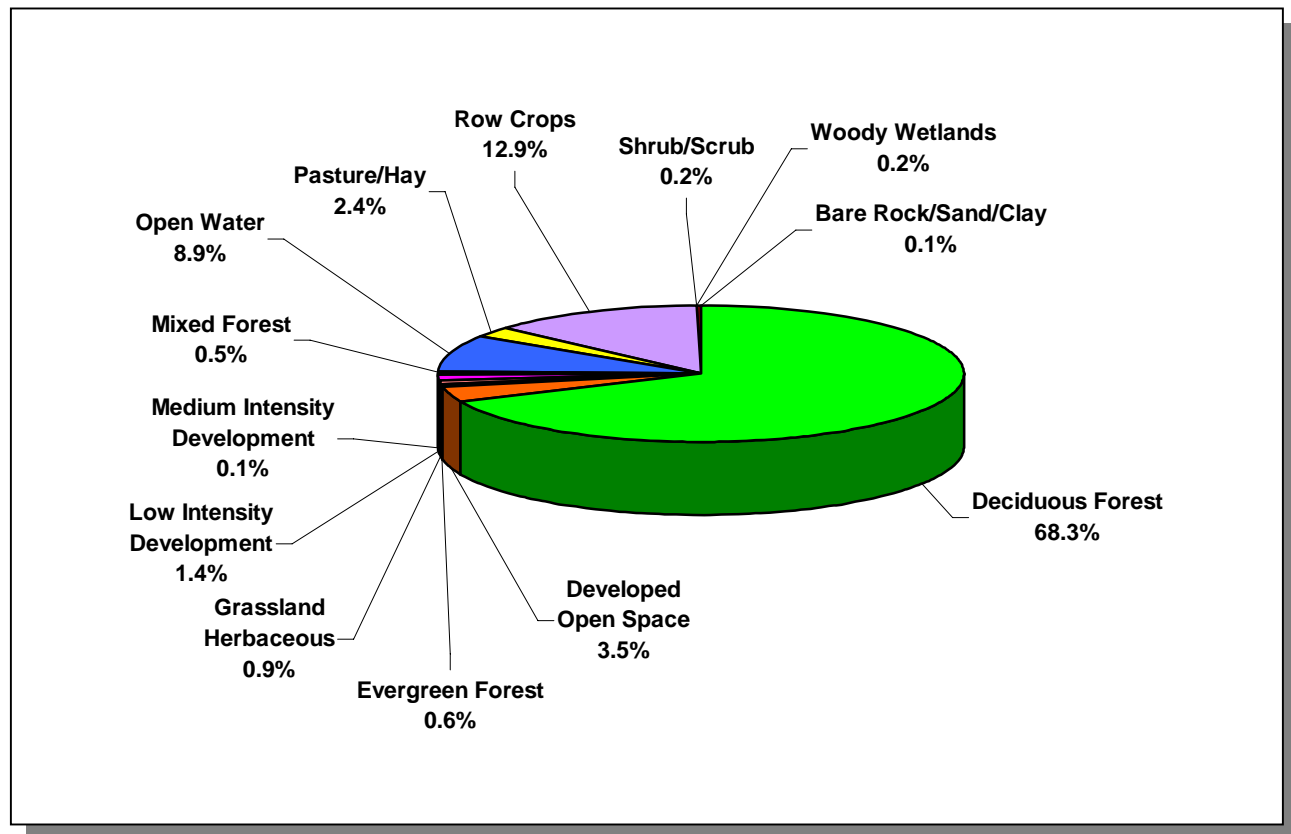


Figure 4-151. Land Use Distribution in Subwatershed 051301050503. More information is provided in Appendix IV.

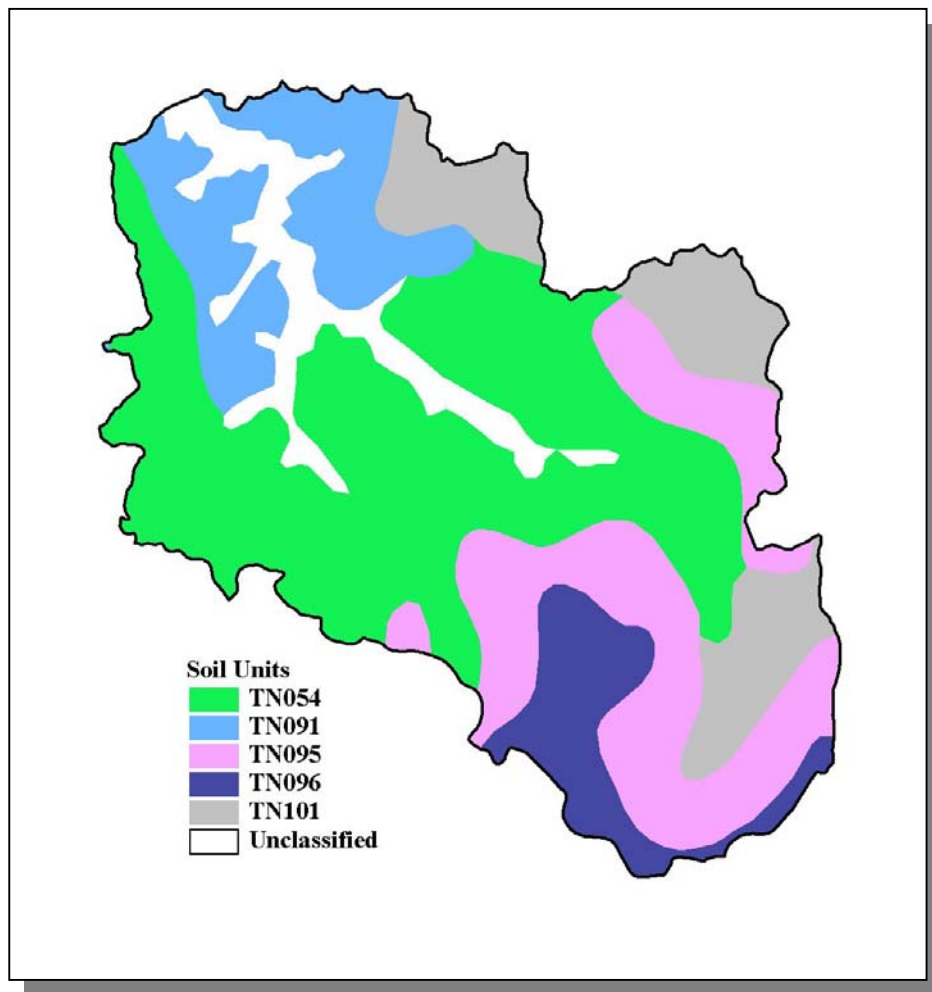


Figure 4-152. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050503.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN091	0.00	B	2.95	5.86	Loam	0.34
TN095	0.00	B	2.35	5.12	Loam	0.31
TN096	10.00	C	1.22	5.16	Silty Loam	0.38
TN101	0.00	B	1.71	5.39	Loam	0.35

Table 4-144. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050503. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Clay	7,238	7,311	7,976	2.94	213	215	234	9.9
Overton	17,636	19,171	20,118	3.6	635	690	724	14.0
Total	24,874	26,482	28,094		848	905	958	13.0

Table 4-145. Population Estimates in Subwatershed 051301050503.

4.2.E.iii.a. Point Source Contributions.

There are no point source contributions in this subwatershed.

4.2.E.iii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
432	1,044	34	<5	26	<5

Table 4-146. Summary of Livestock Count Estimates in Subwatershed 051301050503.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Clay	0	14,574	0	18	174	23
Overton	15,150	27,812	1,200	1,173	811	59

Table 4-147. Summary of Livestock Count Estimates in Clay and Overton Counties.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1
Overton	170.3	170.3	1.7	7.0

Table 4-148. Forest Acreage and Annual Removal Rates (1987-1994) in Clay and Overton Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.55
Grass (Hayland)	0.34
Legumes, Grass (Hayland)	2.11
Grass, Forbs, Legumes (Mixed Pasture)	0.90
Corn (Row Crops)	4.35
Soybeans (Row Crops)	10.79
Tobacco (Row Crops)	28.52
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	21.46
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	0.91

Table 4-149. Annual Estimated Total Soil Loss in Subwatershed 051301050503.

4.2.E.iv. 051301050504 (Obey River).

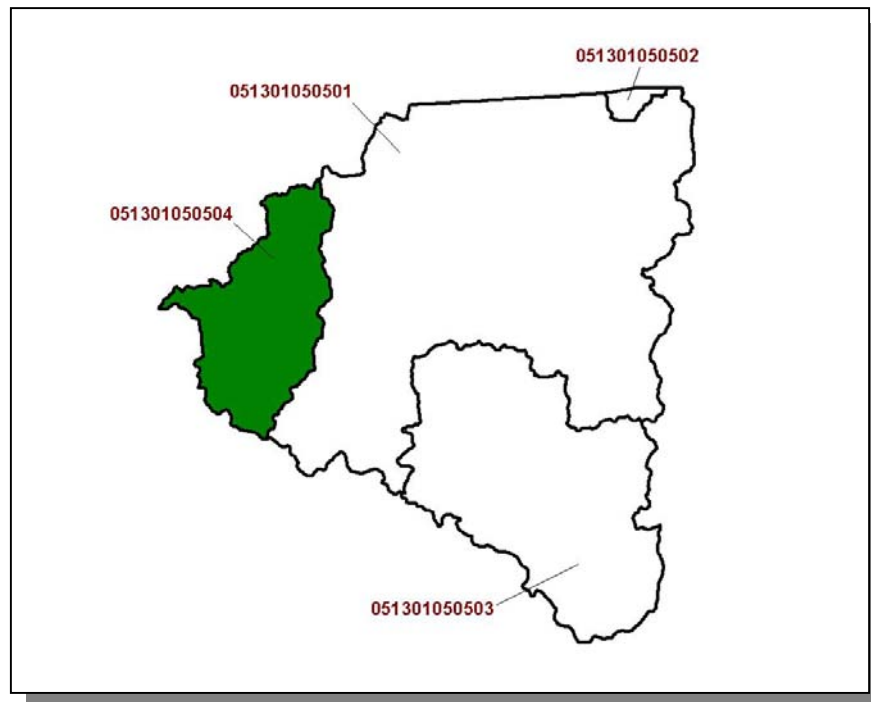


Figure 4-153. Location of Subwatershed 051301050504. All Obey River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

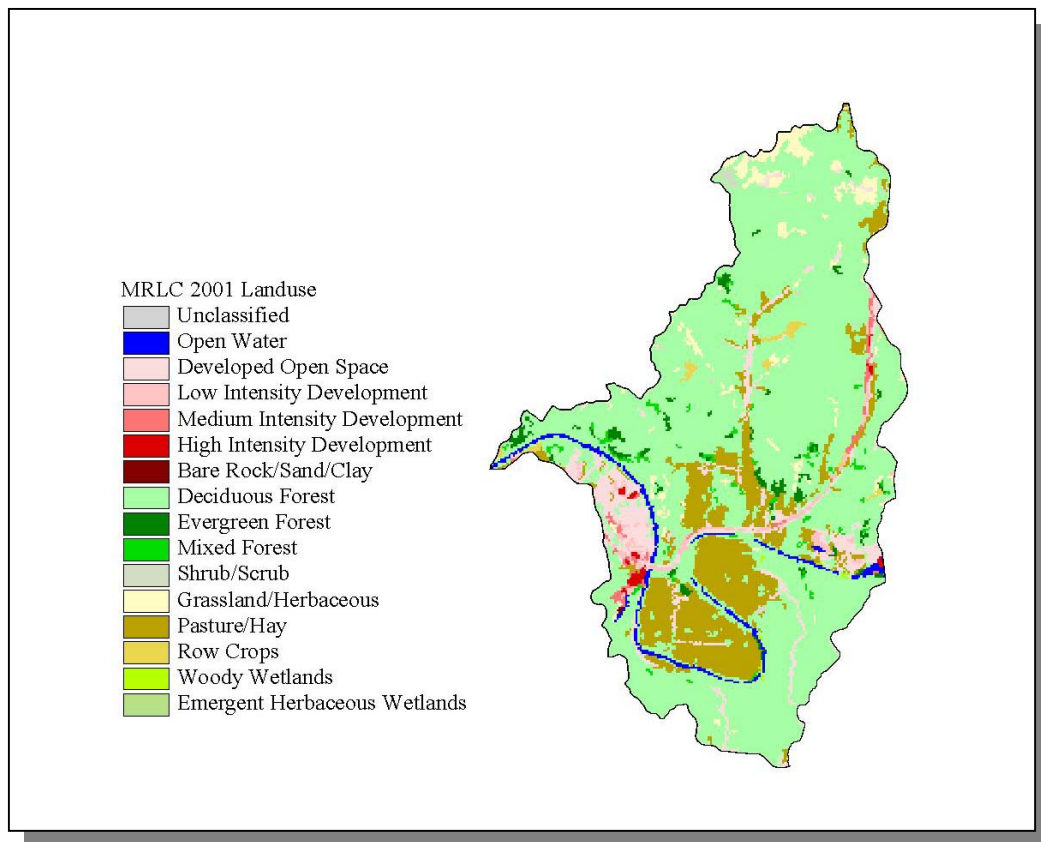


Figure 4-154. Illustration of Land Use Distribution in Subwatershed 051301050504.

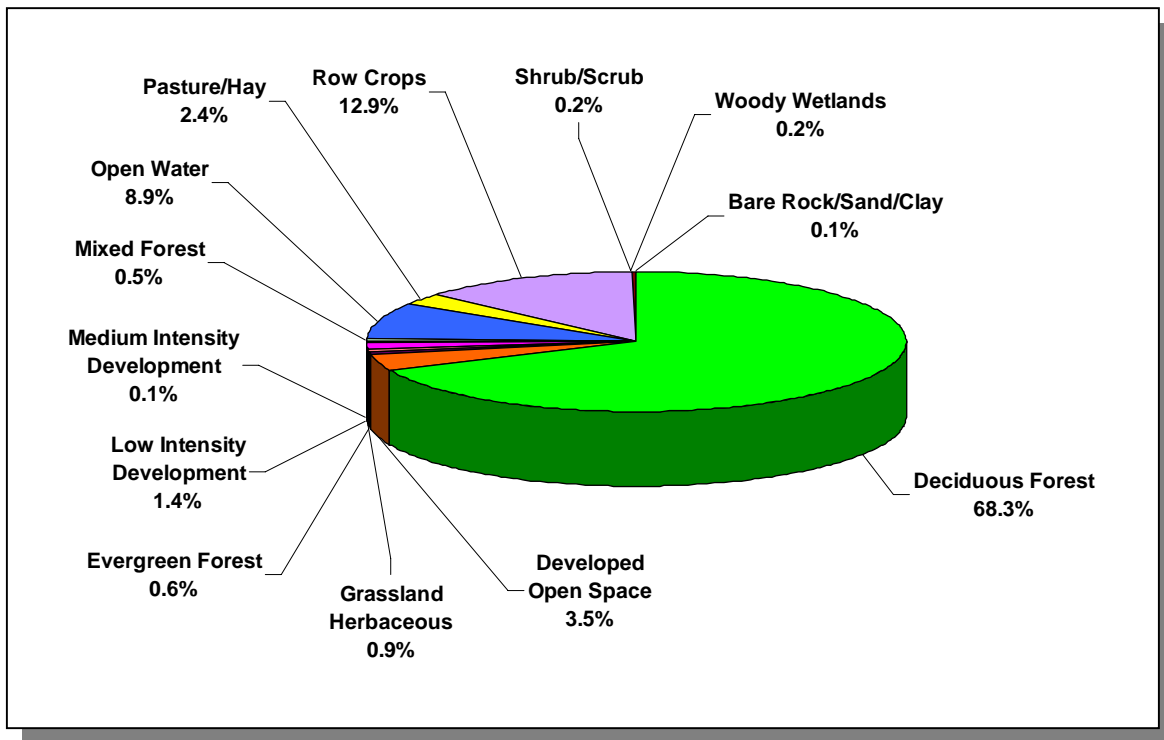


Figure 4-155. Land Use Distribution in Subwatershed 051301050504. More information is provided in Appendix IV.

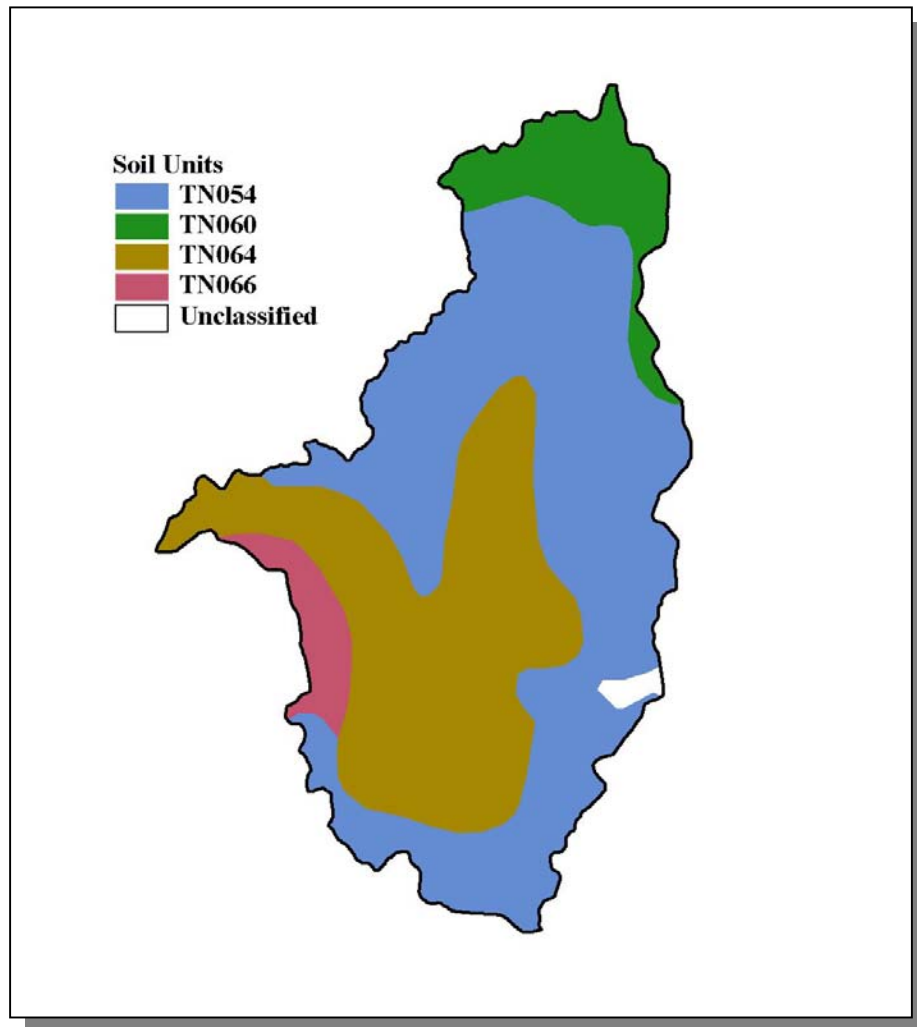


Figure 4-156. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050504.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	20.00	B	1.30	5.32	Silty Loam	0.39
TN064	14.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-150. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301050504. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cumberland	34,736	43,217	46,802	1.63	566	705	763	34.8
Overton	17,636	19,171	20,118	0.24	43	46	49	14.0
Putnam	51,373	58,326	62,315	4.56	2,342	2,659	2,841	21.3
Total	103,745	120,714	129,235		2,951	3,410	3,653	23.8

Table 4-151. Population Estimates in Subwatershed 051301050504.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Monterey	Putnam	2,559	1,113	875	28	10

Table 4-152. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301050504.

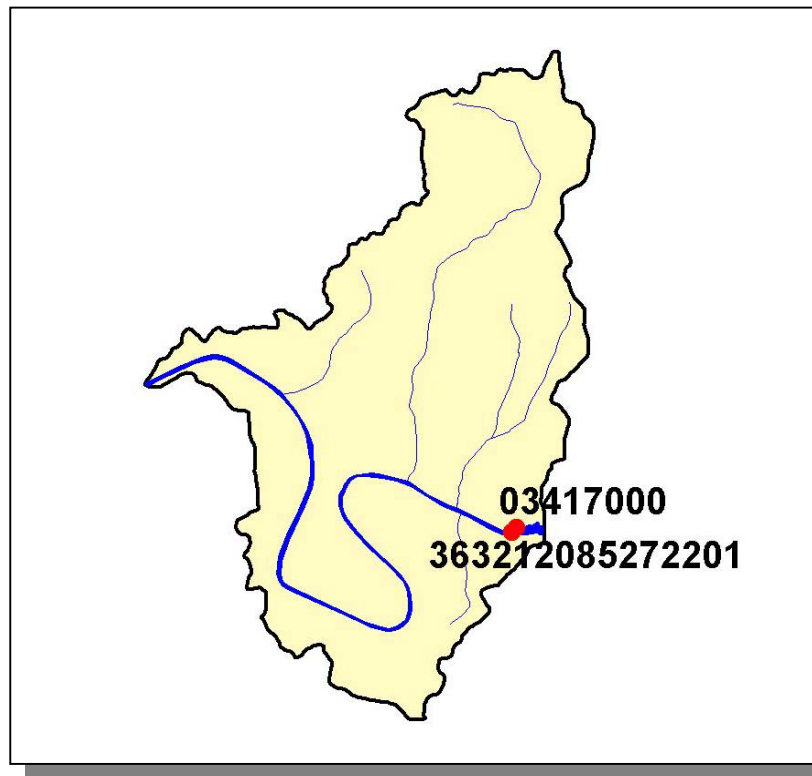


Figure 4-157. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301050504. More information is provided in Appendix IV.

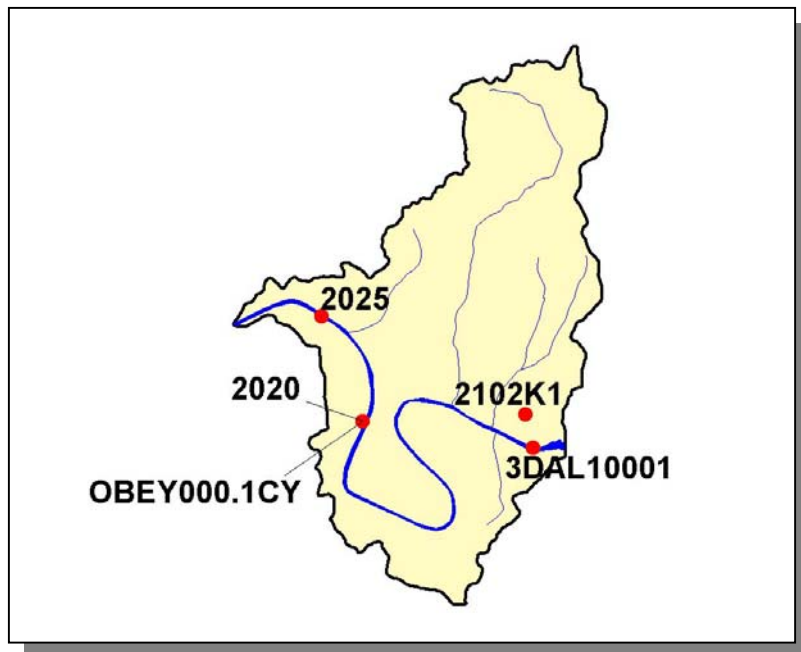


Figure 4-158. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301050504. More information, including site names and locations, is provided in Appendix IV.

4.2.E.iv.a. Point Source Contributions.

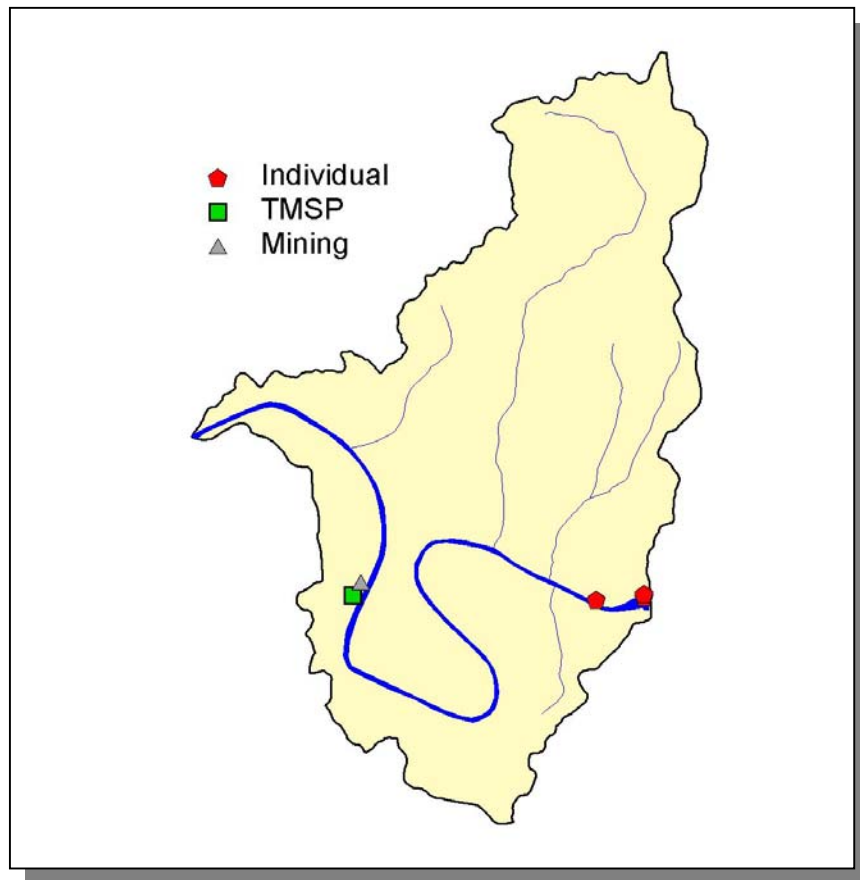


Figure 4-159. Location of Permits Issued in Subwatershed 051301050504. More information, including the names of facilities, is provided in Appendix IV.



Figure 4-160. Location of Active NPDES Sites in Subwatershed 051301050504. More information, including the names of facilities, is provided in Appendix IV.



Figure 4-161. Location of Active Mining Sites in Subwatershed 051301050504. More information, including the names of mining operations, is provided in Appendix IV.

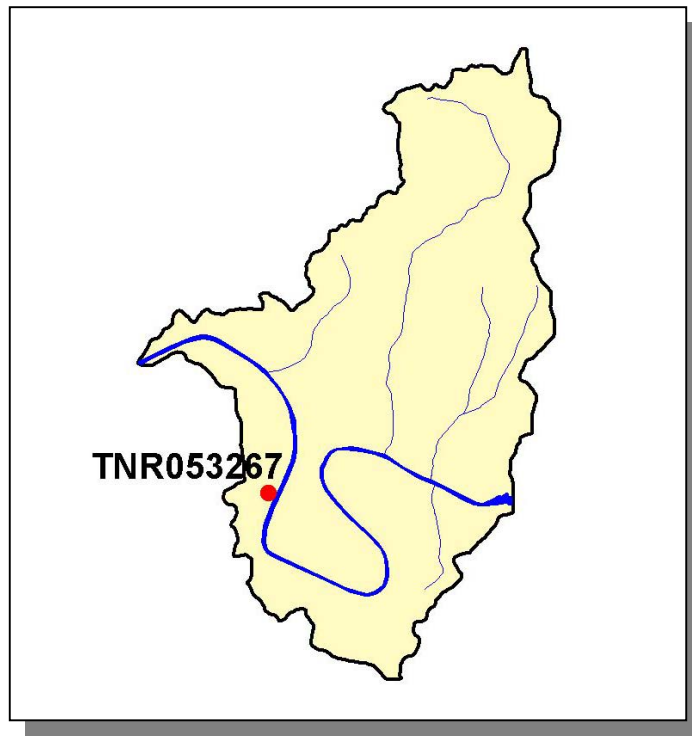


Figure 4-162. Location of TMSF Sites in Subwatershed 051301050504. More information, including the names of facilities, is provided in Appendix IV.

4.2.E.iv.a.i. Dischargers to Water Bodies Listed on the 2004 303(d) List

There are three NPDES facilities discharging to water bodies listed on the 2004 303(d) list in Subwatershed 051301050504:

- TN0004332 (USFWS Dale Hollow National Fish Hatchery) discharges to Dry Branch @ RM 0.1
- TN0021423 (USACOE Dale Hollow Dam Shop STP) discharges to Obey River @ RM 7.0 and @ RM 6.6
- TN0068098 (Dale Hollow Hydro Power Plant) discharges to the Obey River @ RM 7.3

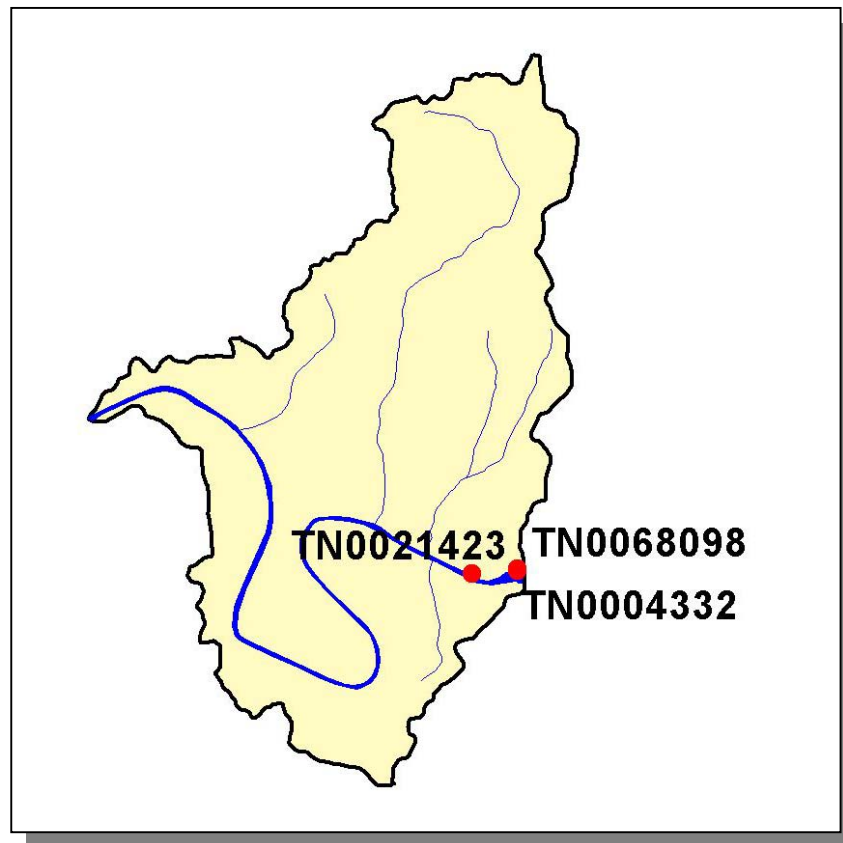


Figure 4-163. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 051301050504. More information, including the names of facilities, is provided in Appendix IV.

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PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0004332					
TN0021423					
TN0068098					

Table 4-153. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050504. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	FLOW
TN0004332	X
TN0021423	X
TN0068098	X

Table 4-154. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050504.

PERMIT #	WET	CBOD ₅	NH ₃	TRC	TSS	SETTLEABLE SOLIDS	PCB	DO	pH
TN0004332	X		X		X	X		X	X
TN0021423		X		X		X		X	X
TN0068098						X	X		

Table 4-155. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050504. WET, Whole Effluent Toxicity; CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

PERMIT #	<i>E. coli</i>	FECAL COLIFORM
TN0021423	X	X

Table 4-156. Bacteria Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301050504.

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4.2.E.iv.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
320	662	39	<5	66	5

Table 4-157. Summary of Livestock Count Estimates in Subwatershed 051301050504. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cumberland	9,468	23,179	2,296	43	6,038	461
Overton	15,150	27,812	1,200	1,173	811	59
Putnam	12,592	24,817	1,095	1,025	1,070	66

Table 4-158. Summary of Livestock Count Estimates in Cumberland, Overton, and Putnam Counties. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Overton	170.3	170.3	1.7	7.0
Putnam	152.5	152.3	3.6	16.4

Table 4-159. Forest Acreage and Annual Removal Rates (1987-1994) in Cumberland, Overton, and Putnam Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.15
Grass (Pastureland)	1.30
Grass (Hayland)	2.10
Legumes, Grass (Hayland)	0.53
Legumes (Hayland)	0.23
Grass, Forbs, Legumes (Mixed Pasture)	0.70
Corn (Row Crops)	3.82
Soybeans (Row Crops)	6.65
Tobacco (Row Crops)	12.38
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	14.63
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	0.23

Table 4-160. Annual Estimated Total Soil Loss in Subwatershed 051301050504.